

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-095082

(43)Date of publication of application : 08.04.1994

(51)Int.Cl.

G02F 1/1333
C09K 19/02
C09K 19/54
G02F 1/13

(21)Application number : 04-204263

(71)Applicant : DAINIPPON PRINTING CO LTD

(22)Date of filing : 09.07.1992

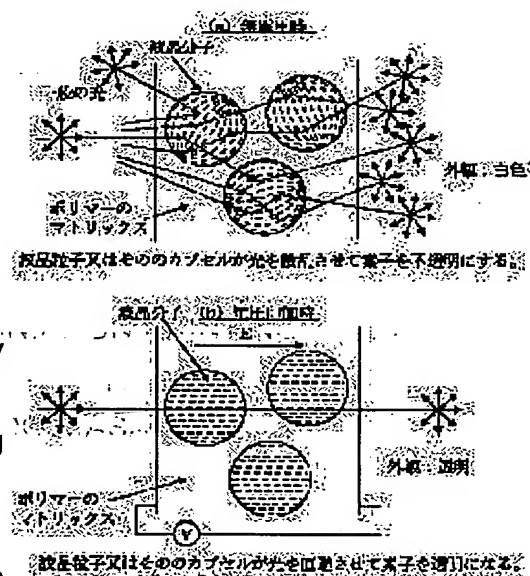
(72)Inventor : Tabei Tatsuya
Ando Masayuki
Shindo Tadafumi

(54) PRODUCTION OF LIQUID CRYSTAL OPTICAL ELEMENT, MICROCAPSULATED LIQUID CRYSTAL AND ITS PRODUCTION

(57)Abstract:

PURPOSE: To provide the high-quality liquid crystal display element having excellent display characteristics, such as high contrast, low voltage driving and steepness, and high productivity.

CONSTITUTION: This process for production of the liquid crystal optical element constituted by holding a layer dispersed with liquid crystal particles in a high-polymer matrix with two sheets of conductive substrates includes at least a stage for producing an emulsion of an oil in water type dispersed with the liquid crystals by passing a dispersion medium consisting essentially of water along one surface of a film having many through-pores and press feeding the liquid crystal into the dispersion medium essentially consisting of the water under the prescribed pressure from the other surface of the film, a stage for microcapsulating the liquid crystal dispersion obtd. by the stage and a stage for forming the layer dispersed with the microcapsulated liquid crystal particles in the high-polymer matrix by applying a coating liquid contg. the microcapsulated liquid crystal and the high-polymer matrix on a substrate and drying the substrate.



LEGAL STATUS

[Date of request for examination] 30.06.1999

[Date of sending the examiner's decision of

Best Available Copy

rejection]

[Kind of final disposal of application other than the
examiner's decision of rejection or application
converted registration]

[Date of final disposal for application]

[Patent number] 3231087

[Date of registration] 14.09.2001

[Number of appeal against examiner's decision of
rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

Best Available Copy

CLAIMS

(57) [Claim(s)]

[Claim 1] It is the manufacture approach of a liquid crystal optical element of coming to **** the layer which the liquid crystal particle distributed in the macromolecule matrix with two conductive substrates. By pressing liquid crystal fit into the dispersion-medium object which makes the above-mentioned water a subject for the dispersion-medium object which makes water a subject along one [which has the hole which a large number penetrated] membranous field with a predetermined pressure from the field of another side of a sink and the film The process which manufactures the water middle oil drop type emulsion which the liquid crystal particle distributed, and the process which microencapsulates the liquid crystal dispersion liquid obtained according to this process, The manufacture approach of the liquid crystal optical element characterized by including at least the process which forms the layer which the microencapsulation liquid crystal particle distributed in a macromolecule matrix by applying and drying coating liquid including this microencapsulation liquid crystal and a macromolecule matrix on a substrate by the electrodeposited method of application.

[Claim 2] The manufacture approach of a liquid crystal optical element according to claim 1 that the film which has many through tubes is porous glass.

[Claim 3] The manufacture approach of a liquid crystal optical element according to claim 1 that the dispersion-medium object which makes water a subject contains a surfactant.

[Claim 4] The manufacture approach of a liquid crystal optical element according to claim 3 that a surface active agent is polyvinyl alcohol.

[Claim 5] The manufacture approach of the liquid crystal display component according to claim 1 in the range whose path of a microencapsulation liquid crystal particulate material is 0.5-7 micrometers.

[Translation done.]

Best Available Copy

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] Drawing which explains actuation of a liquid crystal display component in illustration.

[Drawing 2] The conceptual diagram of film emulsification equipment.

[Drawing 3] Drawing explaining the particle size distribution of an emulsion.

[Drawing 4] Drawing explaining change of light transmittance.

[Drawing 5] Drawing explaining change of light transmittance.

[Drawing 6] Drawing explaining change of light transmittance.

[Drawing 7] Drawing explaining the particle size distribution of an emulsion.

[Drawing 8] Drawing explaining change of light transmittance.

[Description of Notations]

a: Membrane module

b: Nitrogen chemical cylinder

c: Storage tank

d: Emulsion tank

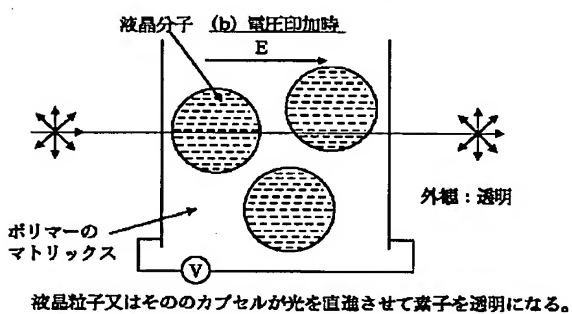
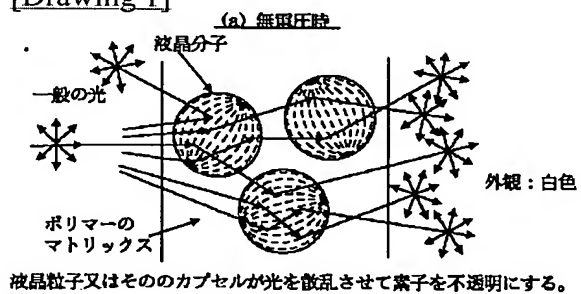
e: Circulating pump

[Translation done.]

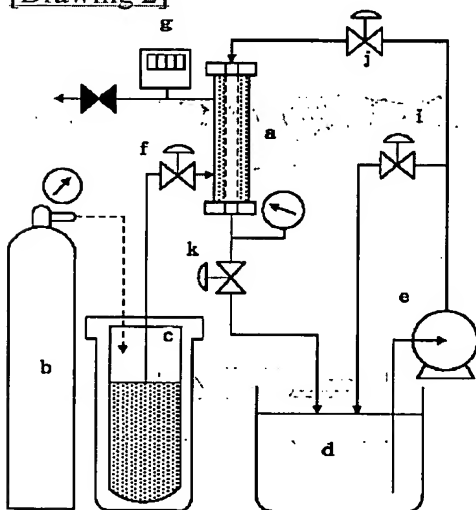
Best Available Copy

DRAWINGS

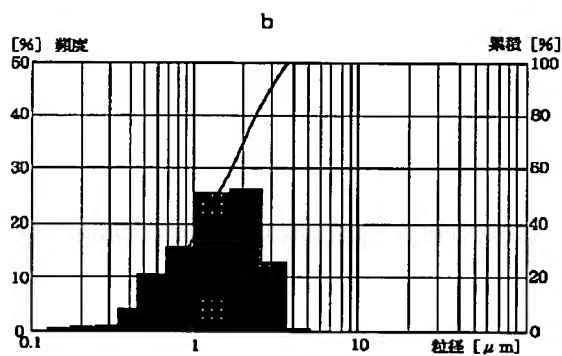
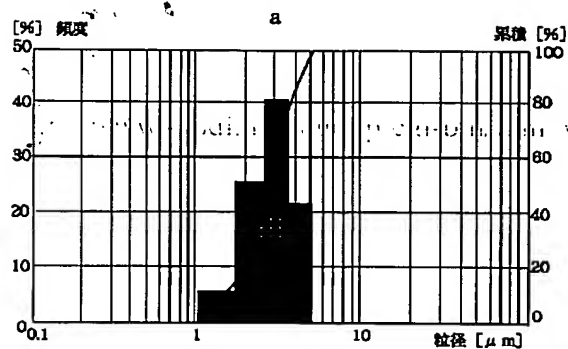
[Drawing 1]



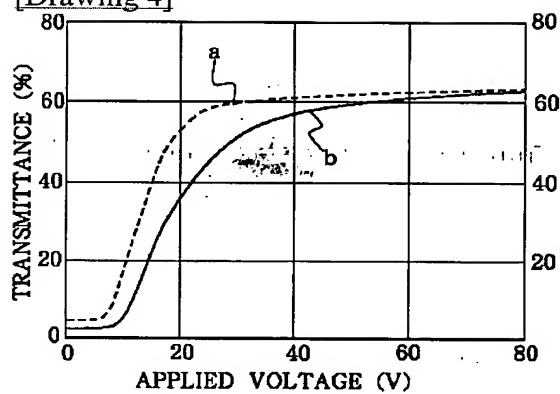
[Drawing 2]



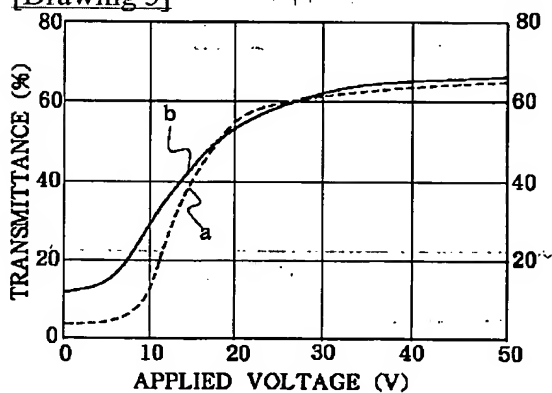
[Drawing 3]



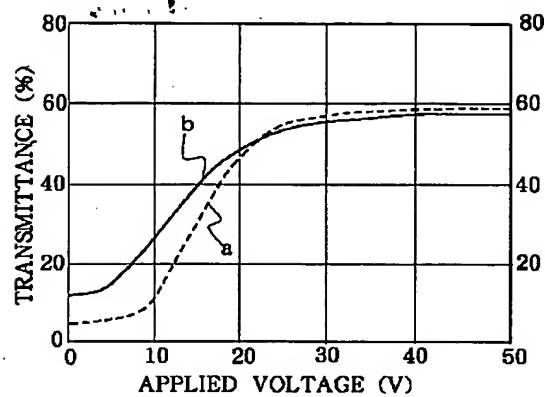
[Drawing 4]



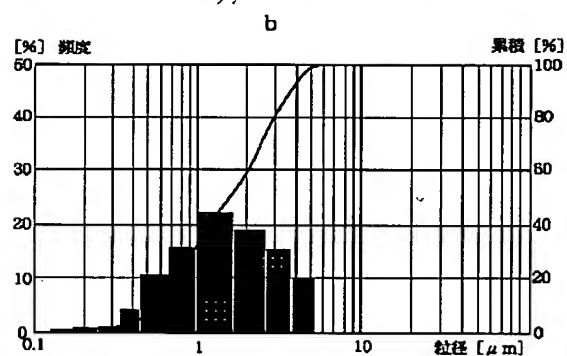
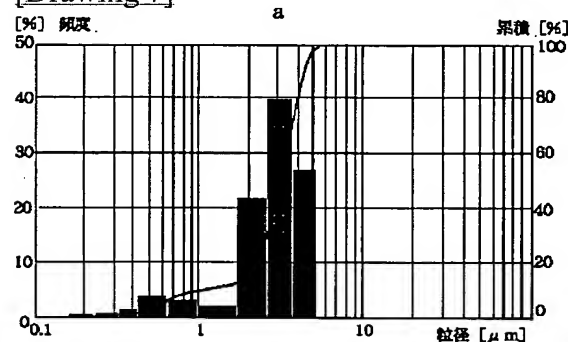
[Drawing 5]



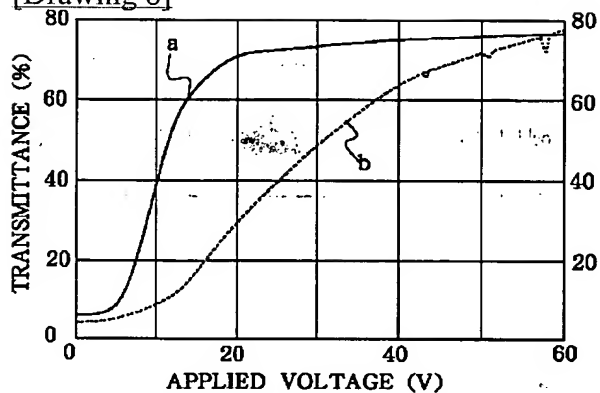
[Drawing 6]



[Drawing 7]



[Drawing 8]



[Translation done.]